

CLAIMS

1. A system for monitoring when chemicals in a development process need replenishing,
5 **characterised by** a reference strip (15) bearing a developed graduated scale of exposure of a radiation sensitive medium to a range of exposures, a testing module comprising a radiation shielded pouch (10) and an unexposed radiation sensitive medium (11) within the pouch, said module including a radiation filter (12) for producing a graduated scale of a range of exposures to radiation on a test strip (11) when it is
10 exposed to radiation and subsequently developed, said scale on the test strip (11) being identical to that on the reference strip (15) when the test strip (11) is exposed to the same radiation and developed in a developing bath with an acceptable chemical level and composition, as that used to produce the scale on the reference strip (15), means for comparing the scales on the reference and test strips side-by-side, the test
15 strip (11) and the reference strip (15) each having a datum indicia (S, F, 17) that align when the test strip (11) and the reference strips (15) are in a datum position relative to each other where the scale on the test strip (11) matches the scale on the reference strip (15), and one or both strips (11,15) having limits indicia (S, F, 17) that together define an acceptable range of variation of the graduated scales of the test strip (11)
20 compared with the test graduated scale of the reference strip (15) when the test strip (11) is moved relative to the graduated scale of the reference strip (15) away from said datum position in a direction along the scale of the reference strip (15) to bring a selected first region of the graduated scale of the test strip (11) in alignment with a matching region of the graduated scale of the reference strip (15).
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2. A system according to claim 1 wherein the datum indicia (S, F) comprises a reference line (S) on each strip that aligns with each other when the strips are in the datum

position, and one or both of the strips (11,15) have a second line (F) spaced from the first line (S) in a direction measured along the direction that the scales extend that defines a limit of acceptable relative displacement of the test strip (11) along the scale of the reference strip (15).

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3. A system according to claim 1 or claim 2 wherein the pouch (10) is provided with a radiation filter or mask (12) that defines two bands (13) of varying thickness so that when the strip (11) is exposed to radiation, two graded scales of varying grey scales are produced on the strip (11) when the film is developed.

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4. A system according to claim 3 wherein the band (13) of the filter (12) has uniform step changes in thickness (and hence density) rather than a gradual change in thickness.

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5. A system according to any one of claims 1 to 4 wherein the test strip (11) has a numerical scale printed on it corresponding to each step change of density of the mask (12).

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6. A system according to claim 5 wherein the test strip has indicia comprising two lines (S,F) marked to indicate "safe" and "fail" respectively at one end of the scale.

7. A system according to any one of claims 3 to 6 wherein the reference strip (15) has identical indicia and markings to that of the test strip (11).

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8. A system according to any one of the preceding claims wherein the pouch (10) is incorporated in a cassette (18) of a film plate.

9. A system according to claim 8 wherein the cassette (18) is provided with a graduated radiation filter (19) or mask that creates the graduated scale of the test strip (11) on the film.

5 10. A method of testing when chemicals in a development process need replenishing comprising the steps of:

- a) providing a system according to any one of claims 1 to 7;
- b) placing a test strip (11) in the sealed pouch (10) and exposing the sealed pouch
10 (10) to radiation;
- c) removing the test strip (11) from the pouch (10) in a darkroom environment and processing the test strip (11) in a development bath the composition and contents of which is to be tested to produce a developed test strip (11);
- d) comparing the developed test strip (11) with the reference strip (15) by laying the
15 strips alongside each other;
- e) moving one strip (11,15) relative to the other in a direction along the graduated scales until a selected region of the graduated scales of the test strip (11) matches a selected region of the graduated scale of the reference strip (15) and thereby establish a matched position;
- f) comparing the position of datum indicia (S, F, 17) of one of the strips (11) with the
20 limits indicia of the other strip (15) when the strips (11, 15) are in said matched position, and
- g) assessing whether the datum indicia (S, F, 17) of one strip (11) is between the
25 limits indicia (S, F) of the other strip (15) thereby to assess whether the chemicals in the processing bath need replenishing.

11. A method according to claim 10 wherein the reference strip (11) is fixed in place on an illuminated background (9) and the test strip (11) is moved axially relative to the reference strip (15) until one of the density steps matches one of the density steps of the reference strip (15).

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12. A method according to claim 10 or claim 11 wherein the datum indicia is a reference line (17) and the limits indicia comprise the reference line (5) and a second line (F).